

**REMARKS**

Claims 16, 18, 19, 21-22, 24-26, 28, 29, 31 and 33-42 are pending.

Claims 16 and 31 are independent claims from which the remaining claims depend directly or through intervening claims.

**REPLY TO REJECTIONS**

**First Rejection**

Claims 16-21 were rejected under 35 U.S.C. § 102(b) as being anticipated by Paoli (previously cited, U.S. Patent No. 5,228,049). This rejection as to the remaining claims is traversed.

Claims 16 and 17 have been combined. An important feature of the present invention is a semiconductor laser device wherein a semiconductor layer has a graded index to gradually change a refractive index thereof in a layer direction. The cited references fails to disclose or suggest this feature in the context claimed. The reference only discloses a construction having three layers each having a different refractive index to the other.

Claim 18 depends on claim 16. This claim in the first instance is patentable for the same reasons as base claim 16. Also, the function of the structure is what is claimed in claim 16 (currently amended). Therefore, a rejection based on 35 U.S.C. 102 is not valid. See *In re Oelrich* 212 USPQ 323 (CCPA 1981) which discusses functional phrases. Also, see MPEP 2173.01.

With respect to the dependent claims rejected, these claims are at least not anticipated for the same reasons as their base or intervening claims.

As each and every limitation of the claims is not specifically or inherently disclosed in Paoli, a rejection under 35 U.S.C. § 102 is not viable.

For the reasons set forth above, the Examiner is requested to reconsider and withdraw the rejection of the claims under 35 U.S.C. § 102.

**Second Rejection**

Claims 22-32 were rejection under 35 U.S.C. § 103(a) as being unpatentable over Paoli in view of Andrews (previously cited, U.S. Patent No. 5,175,643). This rejection as to the remaining claims is traversed.

As set forth above, Paoli does not disclose the limitations of 16 and 18-20. Also, the addition of Andrews does not cure the inherent deficiencies of a rejection based on Paoli. Thus, the dependent claims are considered patentable at least for the same reasons as advanced above.

In the rejection, the Office Action asserts that Andrews in column 4, line 53 to column 5, line 4 would suggest that the boundary layer 33 in Paoli be a dielectric layer or a proton implanted semiconductor layer. See, for example, dependent claims 26-29 that have the dielectric layer.

In Andrews, the dielectric layer is not between the laser generating section 12 or the control section 14 or the amplifier section 16. In Andrews, the boundary layer 54 is between contacts 24, 26, and 28. These are only the contacts for the above-mentioned layers 12, 14, and 16. Accordingly, the reasons advanced in the Office Action are not valid.

Also, the statement in the Office Action of "while it is not explicitly disclosed that another semiconductor layer have a constant refractory index, it is inherent that this will be the case so that the boundary layer does not interfere with the other layers of the laser". This statement is true speculation not supported by any evidence.

It is well settled that inherency cannot be based on possibility or probability. This was set forth in the case of *Continental Can Co., USA, Inc. v. Monsanto Co.* 20 USPQ 2<sup>nd</sup> 1746, 1749 (Fed. Cir. 1991) wherein the Court stated as follows:

Inherency . . . may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

Note, while this case dealt with a rejection under 35 U.S.C. 102, based on the facts in the rejection, and the facts in the claims, the doctrine set forth in that case is applicable here.

Also, in rejecting claim 32, now combined with claim 31, which is a base claim, the Office Action asserts "it is inherent that the boundary layer may have a constant refractive index as shown in the above rejection of claims 22-29". This statement is unsupported by any evidence. See the comments supra.

For the reasons set forth above, the Examiner is requested to reconsider and withdraw the rejection of the claims under 35 U.S.C. § 103.

**Third Rejection**

Claims 31 and 33-34 were rejected under 35 U.S.C. § 103 as being unpatentable over Paoli in view of Sanders et al. (previously cited, U.S. Patent No. 5,912,910). This rejection is traversed.

As discussed above, base claim 31 (amended) has the structure which is not shown or suggested by Paoli. The Sanders reference does not cure the inherent deficiencies of the rejection based on Paoli even though a rejection under 35 U.S.C. § 103 was relied on.

With respect to dependent claims 33-34, these claims are considered patentable at least for the same reasons as base claim 31.

For the reasons set forth above, the Examiner is requested to reconsider the rejection of the claims under 35 U.S.C. § 103.

**Fourth Rejection**

Claims 35-42 were rejected under 35 U.S.C. § 103 as being unpatentable over Paoli and Sanders as applied to claims 31 and 33-34 above and further in view of Andrews. This rejection is traversed.

In the first instance, these are dependent claims and considered patentable at least for the same reasons as their base and intervening claims. The addition of Andrews does not cure the deficiencies of a rejection based on Paoli in view of Sanders.

Furthermore, as explained above, Andrews does not teach or suggest a dielectric layer at the boundary region because Andrews teaches a boundary layer between the electrical contacts in Figure 1 as explained *supra*.

For the reasons set forth above, the Examiner is requested to reconsider and withdraw the rejection of the claims under 35 U.S.C. § 103.

**CONCLUSION**

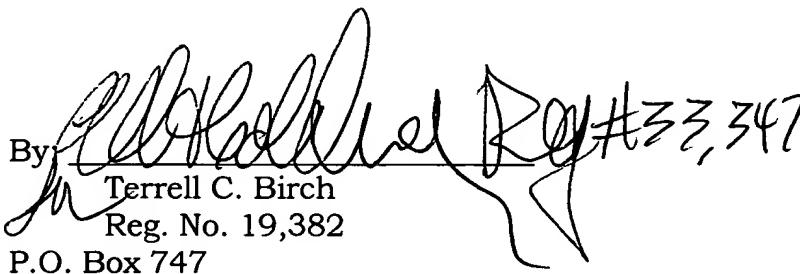
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Elliot A. Goldberg (Reg. No. 33,347) at the telephone number of (703) 205-8000, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a two (2) month extension of time for filing a reply in connection with the present application, and the required fee of \$410.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully Submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By   
Terrell C. Birch  
Reg. No. 19,382  
P.O. Box 747  
Falls Church, VA 22040-0747  
(703) 205-8000

TCB/EAG/kss